

TOWN OF MARION
PLANNING BOARD
PUBLIC HEARING

Public
Hearing
Continued to
January 3, 2022

The Marion Planning Board will hold a Public Hearing on Monday December 6, 2021 at 7:05p.m. remotely via Zoom * to consider proposed changes to the following sections of Chapter 300, Subdivision Rules and Regulations:

Article II General Regulations:

300 - 2.1 Definitions

300 - 2.2 Submitting, completing and withdrawing applications.

300 - 2.5 Fees

Article III Preliminary Plans, Definitive Plans and Residential Compound Plans:

300 - 3.3 Definitive plans

300 - 3.7 Endorsement and recording

300 - 3.10 Residential Compounds

Article IV Design Standards:

300 - 4.1 Streets

300 - 4.6 Stormwater management

300 - 4.7 Utilities

Article V. Construction Requirements

300 - 5.1 Sequence of work

300 - 5.4 Finish grading and paving

300 - 5.5 Curbing.

300 - 5.6 Drainage facilities.

300 - 5.7 Monuments.

Article VI. Administration

300 - 6.1 Inspection

William W. Saltonstall, Chairman

Eileen J. Marum, Vice-Chairman

The Wanderer

November 18, 2021

November 25, 2021

The public is invited to attend and comment on this matter and may inspect the full text at the Office of the Planning Board or Town Clerk.

* Please call or email Terri Santos for the virtual meeting information:
tsantos@marionma.gov or 508-748-3517

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300-2.1

DRAINAGE and SUBSURFACE

The control of surface water within the tract of land to be subdivided.

DRIVEWAY

An improved access (other than a street) connecting between a street and one or more parking or loading spaces. Nothing in this definition is meant to preclude that access from being shared with abutting land by granting of a right-of-way or easement to abutting land/lot owners. In neither case does it qualify as a way, as defined in "private way" or "right-of-way," nor does it satisfy the frontage requirements for buildable lots.

PERMANENT BENCHMARK

A permanent reference point with the elevation by ~~stone bounds~~ accurately established and referenced to the United States Coast and Geodetic Survey datum.

PROBABLE MAXIMUM HIGH GROUNDWATER

The greatest elevation above mean sea level at which groundwater is expected to occur at any point on the site. This elevation shall be determined by direct observation of groundwater in specific areas of the site and by comparison with groundwater monitoring wells in the Town of Marion. The applicant shall estimate the groundwater elevations utilizing accepted methods for calculating probable maximum groundwater elevations, such as the U.S. Geological Survey method for estimating probable high groundwater levels in Massachusetts.

REGISTERED MAIL

Refers to registered or certified mail.

STANDARD SPECIFICATIONS

Shall mean the Commonwealth of Massachusetts Department of Transportation Standard Specifications for Highways and Bridges.

STREET, DEAD-END

A street, portion of a street or combination of streets in which accessibility is limited to a single means of ingress and egress. Any proposed street which intersects solely with a dead-end street shall be deemed to be an extension of the dead-end street. Dead-end streets and their extensions, if any, shall be measured between the sideline intersecting street and the center of the turnaround or the hammerhead. For the purposes of this regulation, a cul-de-sac or hammerhead turnaround is a dead-end street.

300-2.2

C. Notice to Town Clerk of submittal. Every person submitting an application to the Planning Board under these regulations shall concurrently file written notice at the office of the Town Clerk by hand delivery or by registered mail, postage prepaid, that such application has been submitted to the Planning Board. Said notice shall describe the land to which the plan relates in sufficient detail for identification, shall state the date when such application was submitted to the Planning Board, and shall include the name, address and daytime telephone numbers of the property owner, and of the person making application if different from the property owner. A copy of the completed application form shall be filed with said notice at the office of the Town Clerk; and a statement that such notice to the Town Clerk has been made shall be included as part of any application to the Planning Board with a copy to the Board of Health.

300-2.5

B. The fees indicated in Planning Board Fee Schedule, shall accompany the submittal of application materials of the various plans specified in the rules and regulations, to cover costs of processing, technical review, and inspection. No application shall be deemed submitted unless (1) the appropriate fee accompanies said application.

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and (2) a certification by the Assessors that all required taxes have been paid is included. The fees shall be submitted by certified or bank check.

300-3.3

B. Contents. The definitive plan shall be prepared by a registered professional engineer and/or land surveyor, and shall be clearly and legibly drawn in black India ink upon tracing cloth or Mylar, and shall be 24 inches by 36 inches in overall dimensions, with a one-inch margin left on one twenty-four-inch edge of each sheet for filing purposes. The prints shall be at a scale of not less than one inch equals 40 feet, or such other scale as the Board may prescribe as adequate to show details clearly. Profiles of proposed streets shall be drawn to the same horizontal scale as the plan, and with vertical scale 10 times larger unless otherwise permitted by the Board, on separate tracing cloth or Mylar of the same dimensions as the plan sheets. If multiple sheets are used to show the subdivision, they shall be accompanied by an index sheet showing the entire subdivision. The definitive plan shall show the following information:

(10) Existing and proposed topography with two-foot contours based on mean sea level NAVD 88 datum, or at a suitable interval as required by the Board. All buildings and physical features of abutting property that are within 50 feet of the boundary must be shown

(14) Proposed storm drainage of land, including existing natural waterways and the proposed disposition of water from the proposed subdivision to either adequate natural drainage channels or artificial means of disposal thereof. Four copies of a runoff plan and calculations using the rational formula (as described in Seelye's Design Data Book for Civil Engineers, latest edition), based on a ten-year expectancy period, to determine the necessary pipe sizes, which can be no less than 12 inches in diameter. Roadways crossing brooks with a drainage area in excess of 10 acres shall be based on a twenty-five-year expectancy period based on the *Storm Water Management Handbook*. Pipe size, capacity, depth of flow and velocity of flow shall be included;

(23) An overlay at the same scale as the definitive plan showing the NRCS interpretation of suitability for on-site sewage disposal, or showing the USGS surficial geology, or both. Board of Health sanctioned testing required under Title 5 (310 CMR 15.00) may be substituted for this overlay. Test pit logs for locations selected by the Planning Board and shown on one of the above overlays, with not more less than one pit per four proposed lots, selected to reveal general patterns of subsurface characteristics, after consultation with the Board of Health and the Conservation Commission;

300-3.3

D.(2)(d) Describe the impact upon ground and surface water quality and recharge, including estimated phosphate and nitrate loading on groundwater and surface water from septic tanks systems, lawn fertilizer, and other activities within the development. For subdivisions located in whole or in part within the Town's Water Supply Protection District, as established in the Zoning Bylaw, this shall include an analysis of drainage system alternatives, examining the concentration and speed of the transport of contaminants.

300-3.7

A.(1) After the definitive plan has been approved and endorsed, the applicant shall furnish the Board with eight blueprints blackline and the original thereof. The Planning Board, upon receipt of the blueprints blackline and the original, shall send one blueprint blackline to each of the following boards or supervisors of the Town of Marion: Fire Department, Conservation Commission, Board of Health, Board of Assessors, Municipal Light Board, and Department of Public Works, and shall retain the original and two copies for its own files.

300-3.10

G.(1) A staging area to promote ease of access from the common private way to the abutting public way, and to provide for the proper discharge of water from the common private way onto the abutting public way. The staging

area shall be at least 40 feet in length from the pavement on the public way, with a minimum width of ~~18~~ 20 feet of pavement in accordance with the Subdivision Regulations, and sloped not more than four-percent grade for the 40 feet it extends from the pavement on the public way.

G.(2) A center line intersection with the street center line of not less than 60%.

G.(5) A roadway surface, on that portion of the common private way extending beyond the staging area, with a minimum width of ~~16~~ 20 feet for its entire length, and a minimum right-of-way width of 25 feet for its entire length.

G.(6) A turnaround or cul-de-sac of not less than 30 feet in depth and 40 feet in width provided at the terminus. Alternately, a hammerhead may be used with the size approved by the Fire Chief.

300-4.1

B.

Traffic lanes

1 to 10 home sites

2 ~~9~~ 10-foot lanes

2 12-foot lanes

Not required

G. Streets shall be laid out so as to intersect as nearly as possible at right angles. No street shall intersect any other street at less than ~~70°~~ 60°.

M. No dead-end street shall exceed 500 feet in length to the end of the cul-de-sac.

300-4.6

A.(5) Prior to the release of any portion of the performance guarantee, the stormwater management system must be substantially complete, stabilized, and operational. The functionality of the system shall be evaluated by the consulting engineer and the Superintendent of the DPW Department of Public Works Superintendent. The applicant shall submit an as-built plan of the constructed stormwater management system prepared by a registered land surveyor and certified by a registered professional engineer. If the system is found to be inadequate by virtue of physical evidence of operational failure even though it was built as called for in the definitive plan, it shall be corrected before the performance guarantee is released. Examples of inadequacy shall include errors in the infiltrative capacity, errors in the maximum groundwater elevation, failure to properly define or construct flow paths, or erosive discharges from the basins.

B.(3) Stormwater management systems that may eventually be owned and maintained by the Town of Marion shall be designed and constructed to provide the required level of treatment at the least cost to the Town. ~~The Planning Board, in conjunction with the Superintendent of the DPW, may, at its discretion, disapprove a plan due to what it considers to be excessive operation and maintenance (O&M) costs.~~

B.(6) Stormwater management systems shall be designed and constructed so that they do not visually detract from the neighborhood. A landscape design shall be prepared that provides appropriate screening from the adjacent properties and roadways, while providing the degree of access necessary for O&M activities. Landscape plans shall be submitted that appropriately address visibility issues through proper placement, preservation of existing natural vegetation and supplemental plantings where necessary. Rain garden BMPs or other LID BMPs are encouraged.

C.(1).(a) Hydrologic calculations for the two-, twenty-five-, and one-hundred-year twenty-four-hour storm events based on the TR-20/55 Methodology for the pre- and post-developed conditions for the overall project as well as specific calculations for the two-, twenty-five-, and one-hundred-year twenty-four-hour storm events also based on the TR-20/55 Methodology for each specific area subject to flooding, including but not limited to isolated depressions, culvert inlets, and ponding areas for the pre- and post-developed condition.

C.(1).(d) Soil evaluation logs, permeability test results and predicted maximum groundwater levels at each component of the stormwater management system validated by an agent of the Board of Health and/or the Planning

Board. On-site permeability tests may be required to determine the appropriate infiltration value from Table 2.3.3 of the DEP Stormwater Management Policy. Rawls rates may also be used for the exfiltration analysis.

C.(2).(a)[2] The delineation of the one-hundred-year flood elevation as indicated on the Federal Emergency Management Act (FEMA) Flood Insurance Rate (FIRM) maps. If FEMA FIRM maps do not exist or if the one-hundred-year flood elevation of the water body or watercourse is not indicated on the FEMA map, the elevation shall be calculated, utilizing the U.S. Army Corps of Engineers' HEC floodwater modeling methodology or the SCS TR-20

C.(2).(a)[7] Flow paths, lengths, slopes, and design points for each watershed with each segment of the flow path defined.

C.(2).(b)[1] Existing and proposed topography at a two-foot contour interval within the watershed study area. Areas with less than a 1.0% grade shall be shown at a one-foot contour interval with existing proposed spot grades.

C.(2).(b)[3] Boundaries of proposed surficial ground cover conditions within the watershed study area, including roadway areas, building footprints, driveways, lawn/landscaped areas and areas to remain in their natural condition in order to verify the runoff curve number (CnN).

C.(2).(b)[5] Flow paths, lengths, slopes, and design points for each watershed with each segment of the flow path defined.

D.(3).(a) Soil testing to determine the maximum groundwater elevation and soil profiles shall be performed by a Massachusetts approved sSoil eEvaluator or eCertified sSoil sScientist and verified witnessed by the Board of Health and/or an agent of the Planning Board. At the discretion of the Board, soil permeability testing may be required if the initial soil logs exhibit variable soil conditions and inconsistent groundwater profiles.

D.(3).(b)[1] Subsurface investigations for infiltration practices are required to define the suitability of soils for subsurface disposal of stormwater runoff. These explorations are necessary to determine the textural characteristics of the various soil strata, restricting layers, location of the estimated seasonal high water table elevation and depth to bedrock in the location of the proposed system.

D.(4).(c) In areas where the actual on-the-ground soil evaluations exhibit subsurface conditions inconsistent with the NRCS mapping, or in cases where the site has been extensively reworked, the hydrologic soil group (HSG) curve number (CN) values utilized in the TR-20 calculations should be adjusted to reflect the actual on-the-ground cover conditions based on the determination by the Massachusetts-approved sSoil eEvaluator or eCertified sSoil sScientist.

D.(4).(d) The analysis points for the hydrologic study shall be at the edge of the wetland resource area boundary, adjacent down gradient property line, existing storm drain system, or other sensitive receptors such as adjacent agricultural uses. For each pre-development analysis point there shall be a corresponding post-development point.

D.(4).(e) For all infiltration facilities where the bottom is proposed to be within 2'-0" of the Estimated Seasonal Highwater Table, a groundwater mounding analysis based on the Hantush method for the required design storms shall be prepared by a professional engineer or hydrologist. The applicant shall assess the potential effects from the subsurface disposal of stormwater on adjacent road surfaces, private wells, building foundations, embankments and any other site features that may be sensitive to groundwater flow.

D.(6).(g) The entire detention basin area shall be treated with a four-inch layer of screened organic soil borrow conforming to Massachusetts Department of Transportation (MassDOT) Standard Specifications M1.07.0 M1.05.0. The side slopes shall be seeded with an erosion seed mix conforming to MassDOT Specifications M6.03.1 M6.03.0. The basin bottom shall be seeded with a New England erosion control/restoration mix as manufactured by New England Wetland Plants, Inc., or approved equal, applied at a rate of 35 pounds per acre and supplemented by landscape plantings. Infiltration basins shall be treated with four-inch layer of screened organic soil borrow conforming to Massachusetts Department of Transportation (MassDOT) Specifications M1.07.0 and planted with a water-tolerant grass seed mix.

D.(6).(i) The bottom elevation of the infiltration basin shall be no less than two feet above the ~~maximum groundwater table elevation~~ Estimated Seasonal Highwater Table or bedrock and shall be at least one foot above the elevation of the receiving wetland.

D.(6).(l) All infiltration basins must be provided with an overflow mechanism to a receiving wetland or water body. Access/Utility easements must be provided along the designated overflow path to the receiving wetland or water body. All infiltration basins must have an outlet structure with an accessible flap valve to allow manual drainage of the basin in an emergency condition, nonerosive flows at the outlets, inlet splash pads and emergency spillway weirs. Outlet structures and all inlet and outlet piping 18 inches or greater in diameter shall be fitted with trash racks.

D.(7).(c) The bottom elevation of the subsurface recharge system shall be no less than two feet above the ~~maximum groundwater table~~ Estimated Seasonal Highwater Table elevation or bedrock.

D.(7).(g) The entire area of the proposed subsurface recharge system shall be roped off during construction to prevent compaction of the underlying soils by heavy equipment. The basin shall be excavated with light earth-moving equipment to prevent compaction of soils beneath the basin floor or side slopes. Light earth-moving equipment does not include bulldozers or standard-size pay loaders, but may include Low Ground Pressure Equipment (LGP).

D.(7).(j) Subsurface recharge systems shall consist of precast concrete or HDPE galleys, or large-diameter perforated HDPE pipe. The systems shall be encompassed with a 0.75-inch to 1.5-inch double-washed stone conforming to 310 CMR 15.247(1) and wrapped in filter fabric. An individual recharge system for each catch basin inlet or pair of inlets is preferred over a single recharge facility serving multiple inlets. Direct connections from the catch basin inlets to the recharge systems are not permitted. Proprietary treatment systems may be considered in order to satisfy the 80% TSS removal target prior to discharge into the subsurface recharge system.

D.(7).(k) For each line of subsurface galleys or trenches, a minimum of two inspection manholes with cast iron frames and covers to grade for access and maintenance shall be provided at opposite ends of each line. The maximum length of each trench/galley line shall not exceed 50 feet. Multiple trench/galley lines When multiple trench/galleys are used each row of trenches or galleys shall be separated by a distance not less than three times the effective width or depth, whichever is greater.

D.(8).(a) Low-impact development (LID) techniques to manage stormwater shall be considered for all new construction/ and redevelopment of projects for all commercial, and industrial, and residential site development projects and residential projects. Designs that reduce impervious surfaces and employ decentralized stormwater management systems that involve the use of small treatment and infiltration devices and LID Best Management Practices (LID-BMPs) throughout the site in place of a centralized system of closed pipes and a single large facility are preferred.

E.(1).(a) Plan views of each stormwater management system with detailed planting locations identified by species, size, and count. The wetted hydrologic zones within and around the basins should be identified and noted on the plan views. The planting species should be selected based on the frequency and depth of inundation within the hydrologic zones.

E.(1).(b) A detailed planting schedule table identifying the size and type of species planted and individual plant counts. The planting schedule shall identify the botanical and common name and spacing.

E.(1).(e) A two (2) year guarantee on all new plant material requiring replacement of any dead plant material within this period is required.

E.(2).(a) Use of Nnative plant species are preferred over exotic or foreign species because they are well adapted to local on-site conditions and require little or no soil amendments is required. Invasive species as defined by the Massachusetts Invasive Plant Advisory Group (MIPAG) are prohibited for use. Existing natural vegetation is to be preserved where possible and enhanced with native plant species. Plantings requiring routine or intensive chemical applications are not permitted.

F.(1).(a) The quantity of stormwater carried by storm drains shall be determined by the Rational Method on the basis of a twenty-five-year-frequency design storm. The inlet capacity and spacing for catch basins shall be designed to limit the flow in the gutter during a twenty-five-year design storm to a maximum of four feet in width as calculated utilizing methodologies described in Drainage of Highway Pavements, Hydraulic Engineering Circular No. 12, as published by the U.S. Department of Transportation, Federal Highway Administration. In any event, water shall not be allowed to run for more than 300 feet on paved surfaces. Computations for drainage requirements shall be prepared by a registered professional civil engineer and submitted with the definitive plan drainage report prepared for the project.

F.(1).(b)[1] Subcatchment area plan(s) at a clear legible scale showing the following information.

F.(1).(b)[9] Rainfall intensity based on local rainfall/intensity/duration data.

F.(1).(e) In general, the design of pipes shall be such as to provide for a flow of water at speeds velocities between two feet per second and 10 feet per second under full flow conditions than that required to achieve the velocities specified. The minimum grade shall be not less than 0.5% or less than that required to achieve the velocities specified and the minimum pipe diameter shall be 12 inches, designed to flow full with the hydraulic gradient at the crown.

F.(1).(g) Catch basins shall have a minimum four-foot sump below the invert and coated with bituminous waterproofing. Catch basins or inlets shall be spaced along both sides of a street at no greater than three-hundred-foot (300') intervals, and located at all low points and corner rounding at street junctions. Drain manholes shall be located at every change of direction and/or grade elevation but in no cases greater than 300 feet apart. Catch basins shall not serve as manholes. All pipes from catch basins must shall flow to manholes.

F.(1).(j) In some cases, earth and stone-paved open channels should be used. The typical section of the earth channel should have a flat bottom and side slopes of one vertical on three horizontal with the top of the slope at least one foot higher than the design water surface. The maximum velocity allowed in an open earth channel at design flow should be six (6.0) fps. A coefficient of friction "n" equals to 0.025 maximum should be used for both the earth and stone-paved channels. Detailed calculations, plans and profiles showing proposed channels and treatment of channel base and side slopes shall be submitted for Planning Board approval.

F.(1).(l) Granite curb inlets per Section M9.04 of the Standard Specification shall be installed adjacent to all catch basins at low points and any other location granite curbing is required. If located within an area of Cape Cod berms, a minimum six feet transition curbing (granite, Type VA4) shall be installed along the curblin on both sides of the curb inlet. The Cape Cod berms shall be constructed to blend with the transition curb.

F.(1).(n) Rip-rap spillways shall be provided at all pipe outfalls and critical areas within drainage swales or ditches subject to erosive conditions.

F.(2).(a) Drainage facilities shall be provided as indicated on the plan and in conformity with these regulations and the requirements of Sections 100, 200, 220, 230, and 258, and 260 of the Commonwealth of Massachusetts Department of Transportation Standard Specifications for Highways and Bridges, herein referred to as the "Standard Specifications."

F.(2).(d) The standard depth of catch-basins shall be four feet below the invert of the outlet. Manholes shall be constructed to the required depth at each junction point and as shown on the plan. Pipe culvert and pipe drains shall be in conformity with the requirements of Section 230 of the Standard Specifications for installation of pipes.

F.(2).(e) All drain pipes except subdrains shall be reinforced concrete pipe (RCP) with bell and spigot gasketed joints and shall be installed according to the size as shown on the plans. No backfilling of pipes shall be done until approval of the Department of Public Works. All drainage trenches shall be backfilled per Section 201 of the Standard Specifications.

F.(2).(f) Where subdrains are required they shall be constructed in conformance with Section 260 of the Standard Specifications. Such subdrains may be required by the Board following clearing and grubbing operations. No

drainage pipes from roof drains, driveway drains, or other on-lot sources shall be connected to the street drainage system. Cast iron manhole covers and catch basin grates shall be as manufactured by or equivalent to ~~E.L. LeBaron Foundry Model No. LB 268-3 for manholes, LF 248-2 or LK 120A (Cascade Grate)~~ EJ OMA5540 frame with EJ OMA 5520 grate. Frame and grate type to suit. Manhole frames and covers. EJ OMA 1240 solid cover marked "DRAIN" cast into the manhole for catch basins. The word "DRAIN" shall be cast into the drain manhole covers.

300-4.7

F.(1) Public sewers shall be designed according to professional engineering practices and in accordance with the requirements of the standards of the ~~Water~~ Sewer Department.

G.(1) Public water mains shall be not less than eight-inch-diameter Class 52 cement-lined ductile iron pipe and fittings with push-on gasket joints.

300-5.1 Prior to starting any construction activities, a registered land surveyor shall ~~set off~~ grade stakes along the roadway right-of-way, center line, sidelines, and sidewalks at one-hundred-foot intervals. ~~All trees to be preserved shall be flagged. The site shall be walked with a designated agent of the Department of Public Works. All construction and work sequencing shall be conducted in accordance with the following sections.~~

300-5.4

D. The subgrade under the roadway gravel base shall be a free-draining material for a minimum depth of two feet and shall conform to the requirements of Section ~~M1.020.0~~ M1.02.0 or ~~M1.03.0~~ Type A of the Standard Specifications. Existing soils that do not conform to these requirements shall be removed and replace with gravel base material conforming to the above.

E. The gravel base of the roadway and sidewalks shall consist of unfrozen, hard, durable stone and coarse sand, free from loam and clay, uniformly graded, containing no stone having a diameter of more than ~~three~~ two inches and conforming to the requirements of Section ~~M1.03.1~~ M1.03.0 Type C of the Standard Specifications.

H. Gravel for base shall be spread in two layers of equal thickness, each thoroughly rolled true to lines and grades so as to yield a total minimum depth of 12 inches after thorough compaction. Any depression or soft spots that appear during or after rolling shall be filled with crushed bank gravel and be rerolled until the surface is true and even. Gradation and compaction tests shall be performed and submitted to the Board for review. Testing results shall be satisfactory to the Board prior to placement of the base course of pavement. Gradation and compaction tests shall be provided for each 2,000 square feet of roadway area or fraction thereof.

I. All sidewalk areas shall be provided with a gravel base foundation consistent with that required for roadways. Gradation and compaction tests shall be performed and submitted to the Board for review at the rate of one (1) test per 1,000 square feet of sidewalk, of finish gravel base.

300-5.5

B. Granite curbing shall be set in concrete and on at least six inches of compacted bank gravel conforming to M1.03 Type C of the Standard Specifications in accordance with the cross section. Straight-ended granite curb inlet stones shall be used in all instances.

300-5.6 Drainage facilities shall be provided as indicated on the definitive plan and in conformity with the requirements of Sections 200, 220, and 230, ~~258, and 260~~ of the MassDOT Standard Specifications.

300-5.7

A. Concrete or granite ~~M~~onuments shall conform to the standard specifications acceptable to the Massachusetts Land Court and shall be set according to such specifications. No permanent monuments shall be installed until all construction which would destroy the monuments is completed.

C. Permanent boundary markers shall be placed on lot boundaries. The minimal number is four: either at the four corners or two at the roadway and two at a setback distance acceptable to the Planning Board.

300-6.1

C.(3) Roadbeds Subgrade: following excavation of the roadbed and sidewalk, but prior to any backfilling.

C.(4) Drainage system: following installation of drain pipe, culverts, catch basins, manholes, and all related construction, but prior to any backfilling.

C.(6) Finished subgrade: following ~~installation of backfill~~ grading and compaction of subgrade.

C.(7) Finished gravel ~~foundation~~ roadbase: following application, grading, and compaction of each gravel ~~foundation~~ roadbase material lift or layer.

DRAFT

